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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/533,434

05/02/2005

Akira Kawabe

071971-0203

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11/14/2006

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EXAMINER

LAMB, CHRISTOPHER RAY

ART UNIT

PAPER NUMBER

2627

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/533,434

Applicant(s)

KAWABE ET AL.

Examiner

Christopher R. Lamb

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 18 is/are rejected.
- 7) ☒ Claim(s) 6-17 and 19-36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 May 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5/2/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 23-27 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

In describing the background art (for example, in pages 1-4; also page 16), the disclosure references figures 12-16. These figures do not appear to be related to the background art. Instead, they appear to be related to the ninth and later embodiments of the invention.

Instead, it appears that figures 23-27 are representative of the background art. Where the disclosure references figure 12 in reference to the background art, it appears it should reference figure 23; for figure 13, figure 24; for figure 14, figure 25; and so on.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Hamada et al. (US 2002/0181360).

Regarding claim 1:

Hamada discloses:

A phase error detecting circuit for use in extracting, based on reproduced data that has been reproduced from a record reproducing apparatus and quantized, a synchronous clock which is synchronized with the reproduced data, the phase error detecting circuit comprising:

a cross detector for receiving the reproduced data and a specified reference value and detecting a cross timing at which the reproduced data crosses the reference value (paragraphs 74-88);

a phase error calculator for receiving the reproduced data and a cross timing signal from the cross detector and calculating a difference between the value of the reproduced data and a zero value at the cross timing as phase error data (paragraph 93); and

a cross reference value generator for receiving the phase error data from the phase error calculator and updating the reference value of the cross detector based on

the phase error data (paragraph 81; the center value used by the edge detection circuits may be based on the offset value detected).

Regarding claim 2:

In Hamada the cross reference value generator updates, every time the phase error calculator calculates the phase error data, the calculated latest phase error data as a reference value for the cross detector (paragraph 81).

Regarding claim 3:

In Hamada the cross detector has: a rising cross detector for detecting a rising cross timing at which the reproduced data crosses the reference value upon rising thereof; and a falling cross detector for detecting a falling cross timing at which the reproduced data crosses the reference value upon falling thereof (paragraphs 73-88).

Regarding claim 4:

In Hamada the phase error calculator calculates, upon receipt of a rising cross timing signal from the rising cross detector, a difference between the value of the reproduced data and the reference value at the rising cross timing as rising phase error data and calculates, upon receipt of a falling cross timing signal from the falling cross detector, a difference between the value of the reproduced data and the reference value at the falling cross timing as falling phase error data (paragraph 51-52).

Regarding claim 5:

In Hamada the cross reference value generator receives the rising edge phase error data and the falling edge phase error data each from the phase error calculator and outputs the rising phase error data as a rising reference value to the rising cross

detector, while outputting the falling phase error data as a falling reference value to the falling cross detector (paragraph 80: the cross detectors may use the offset values from the second phase error calculating circuit; paragraphs 151-152: the second phase error calculating circuits may use separate offset values for the rising and falling (leading and trailing) detectors).

Regarding claim 18:

Hamada discloses:

A synchronous clock extracting circuit comprising (Fig. 1):

a phase error detecting circuit as recited in claim 1 (Fig. 1: 44, 54); and

a voltage control oscillator for receiving the phase error data outputted from the phase error detecting circuit and changing a frequency of a synchronous clock in accordance with a phase error shown by the phase error data (Fig. 1: 46, 56).

Allowable Subject Matter

5. Claims 6-17 and 19-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 6-8:

All three of these claims involve inverting the sign of a reference value used for one cross detector and using the result as the reference value for the other cross detector. Because the closest prior art of record, Hamada, calculates a center value for

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its reference value, there is no reason to calculate the inverse of it. Thus this limitation in combination with the other limitations of the claim render these three claims allowable over the prior art of record.

Regarding claim 9:

The closest prior art of record, Hamada, does not teach or suggest a control signal generator for outputting a control signal to the cross reference value generator such that switching is performed between updating of the reference value based on the phase error data and the fixing of the reference value to zero in the cross reference value generator. This limitation in combination with the other limitations of the claim render it allowable over the prior art of record.

Regarding claims 9-17:

They are dependent on claim 9.

Regarding claim 19:

The closest prior art of record, Hamada, does not disclose updating the reference value for the cross detector based on a threshold from a threshold generator. This limitation in combination with the other limitations of the claim render it allowable over the prior art of record.

Regarding claims 20-36:

They are dependent on claim 19.

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Conclusion


7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Furtney (US 3,878,473), Cardero et al. (US 5,204,848), Clark et al. (US 5,629,914), Fujimoto (US 5,848,047),.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Lamb whose telephone number is (572) 272-5264. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CRL 11/7/06


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